REMARKS

This paper is responsive to an Office Action dated December 9, 2004. Prior to this response claims 1-25 were pending. After amending claims 1, 8, 10, 13-15, 17, 19, 22, and 23, and canceling claim 7, claims 1-6 and 8-25 remain pending.

Section 3 of the Office Action states that claims 1-5 and 10 have been rejected under 35 U.S.C. 103(a) as unpatentable with respect to Yamazaki et al. ("Yamazaki"; Japanese Abstract 1995-125908). The Office Action states that Yamazaki describes all the elements of claim, except that Yamazaki does not teach a method for forming an insulator film overlying a substrate. This rejection is traversed as follows.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

The Yamazaki abstract cited in the Office Action is a terse statement that, to the Applicant's understanding, appears to describe the

fabrication of a single-crystal transistor. The process deposits an amorphous Si (a-Si) film, and laser-irradiates (or heats) the a-Si film to form a "crystal seed" layer. The term "crystal seed" is not explained. The crystal seed layer is then patterned, and another a-Si layer is deposited over it. A second laser-irradiation process is performed, so that single-crystal regions are formed in response to the underlying seeds. These single-crystal regions are used as active layers in a TFT.

With respect to the first *prima facie* requirement to support a case for obviousness, there must be some suggestion in the reference, or in the general knowledge, to modify Yamazaki in such as way as to make the invention of claim 1 obvious. It may be argued that the information presented in the Abstract is insufficient to enable one skilled in the art to practice Yamazaki's invention. However, it is even more certain that Yamazaki's Abstract fails to suggest the use of a nanowire or SAM as a single-crystal seed, as recited in claim 1 (as amended) of the Applicant's invention. Further, the Applicant is unable to determine if Yamazaki's seed crystal layer forms single-crystal, polycrystalline, or nanocrystalline seeds.

"That prior art patents may have described their failed attempts or attempts that used different elements is not enough. The prior art must be enabling." *Motorola Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 1471, 43 USPQ2d 1481, 1489, (Fed. Cir. 1997). ("In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." (quoting *Beckman Instruments Inc. v. LKB Produker AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989), *aff'd without op*, 930 F.2d 37 (1991)).

Alternately stated, Yamazaki's Abstract does not suggest the use of a nanowire or SAM as a seed crystal. Neither was the use of nanowires or SAMs as single-crystal seeds well known in the art at the time of the Applicant's invention.

With respect to the second *prima facie* requirement, even if an expert were given the Yamazaki Abstract as a foundation at the time of the Applicant's invention, there is no reasonable expectation that this expert could derive the invention of claim 1 without undue experimentation. The Yamazaki Abstract simply does not provide enough information to suggest to an artisan that a seed crystal be formed, except through Yamazaki's annealing process.

With respect to the third *prima facie* requirement, Yamazaki does not explicitly describe or suggest all the elements of claim 1. Yamazaki only describes a process that forms a seed crystal by annealing an underlying a-Si layer. The invention of claim 1 does not require an underlying a-Si layer or a process that anneals an a-Si layer to form a seed crystal. Alternately stated, Yamazaki does not describe the use of a nanowire or SAM as a single-crystal seed. Yamazaki does not explicitly describe all the elements of claim 1, or suggest modifications that make claim 1 obvious. Claims 2-6 and 8-25, dependent from claim 1 enjoy the same benefits and the Applicant requests that the rejection be removed.

The Affidavit of Robert Sposili, Ph.D., is enclosed as Attachment A. Attachment B is a list of some of Dr. Sposili's publications. In his affidavit, Dr. Sposili states that the Yamazaki reference only describes the formation of a crystal seed in response to an initial laser-annealing step. It is Dr. Sposili's opinion that there is no suggestion in the Yamazaki reference, or in the generally available knowledge at the

time of the invention, to use a nanowire as a crystal seed. The Applicant respectfully requests that the technical assertions made in Dr. Sposili's affidavit be considered. The Applicant's legal conclusions naturally follow as a result of Dr. Sposili's technical assertions.

Section 4 of the Office Action states that claims 6-9 and 11-15 would be found allowable if rewritten in independent form, including all the subject matter of the base and intervening claims.

It is believed that the application is in condition for allowance and reconsideration is earnestly solicited.

Respectfully submitted,

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